

AD-A194 581

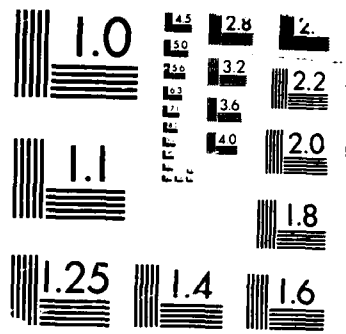
QUASI-LIQUID CRYSTALLINE MATERIALS WITH SPECIAL
ELECTRO-OPTIC PROPERTIES(U) WEIZMANN INST OF SCIENCE
REHOVOTH (ISRAEL) V KRONGAUZ MAY 88 R/D-4633-CH-01
DAJA45-85-C-0030 F/G 7/3

1/1

UNCLASSIFIED

NL





MICROCOPY RESOLUTION TEST CHART

10X 40 100 40 ARDS-1963-A

AD-A194 581

QUASI-LIQUID CRYSTALLINE MATERIALS
WITH SPECIAL ELECTRO-OPTIC PROPERTIES

6th Period Report

Prof. Valeri Krongauz

December 1987 - May 1988

United States Army

European Research Office of the US Army

London, ENGLAND

Contract number DAJA45-85-C-0030

THE WEIZMANN INSTITUTE OF SCIENCE

DTIC
ELECTE
MAY 25 1988
S D

Approved for public release
Distribution unlimited

The research reported in this document has been made possible through the support and sponsorship of the U.S. Government through its European Research Office in the U.S. Army. ~~This report is intended only for the internal management use of the Contractor and the U.S. Government.~~

During the past six months our main efforts were directed towards investigation of photochromic liquid crystal polymers with different photochromic and mesogenic groups in order to study the effect of the structure of the groups on:

- a) photosensitivity of the polymers;
- b) stability of the colored merocyanine form formed on irradiation and,
- c) their capability to aggregate and crosslink the macromolecules.

Side chain liquid crystal polysiloxanes and polyacrylates with rod-shaped (Fig. 1) and T-shaped (Fig. 2) spiropyrans attached as side groups were synthesized by the polymer analogous reactions and by free radical polymerization.

Examination of these polymers showed that there is a substantial difference in their behaviour. The rod-shaped photochromes give the merocyanine dyes with a very strong trend to aggregation while T-shaped photochromes give mainly non-aggregated merocyanine groups. The structural, spectral and thermodynamic properties of these two types of polymers are also different.

Our research plans include examination of electro-optical properties of the polymers.

REFERENCES

1. I. Cabrera and V. Krongauz *Macromolecules*, 20, 2713 (1987).
2. I. Cabrera, V. Krongauz and H. Ringsdorf, *Angew. Chem. Int. Ed.* 26, 1178 (1987).
3. I. Cabrera, V. Krongauz, and H. Ringsdorf, *Molec. Cryst. Liq. Cryst.*, in press

Accession For	
NTIS CRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By <i>perform 50</i>	
Distribution	
Availability Codes	
Dist	Avail. for Special
<i>A-1</i>	

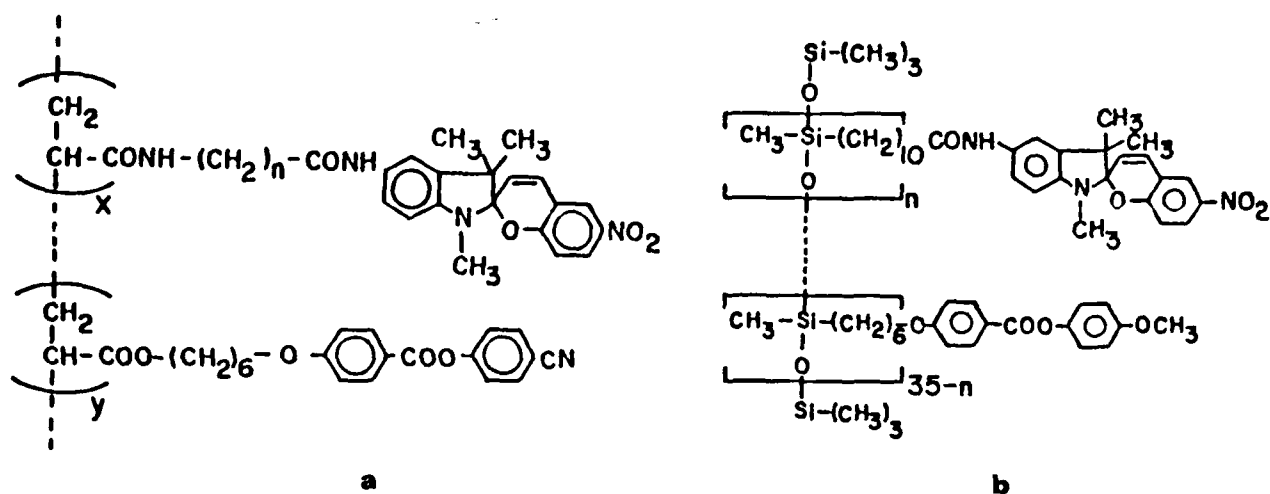


Fig. 1 Rod-shaped polyacrylates (a) and polysiloxane (b)

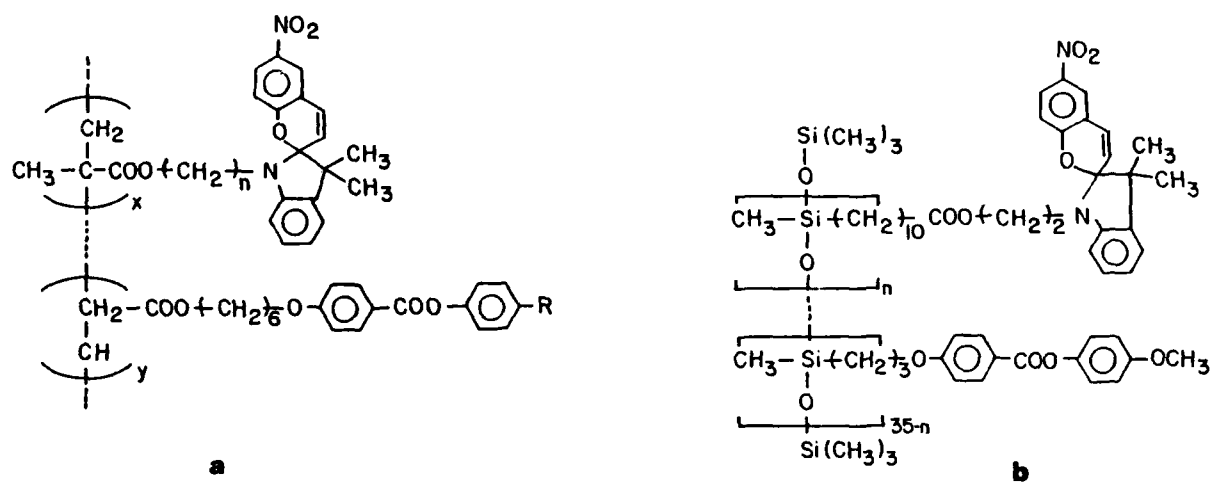


Fig. 2 T-shaped polyacrylates (a) and polysiloxane (b)

END

DATE

FILMED

8-88

DTIC